

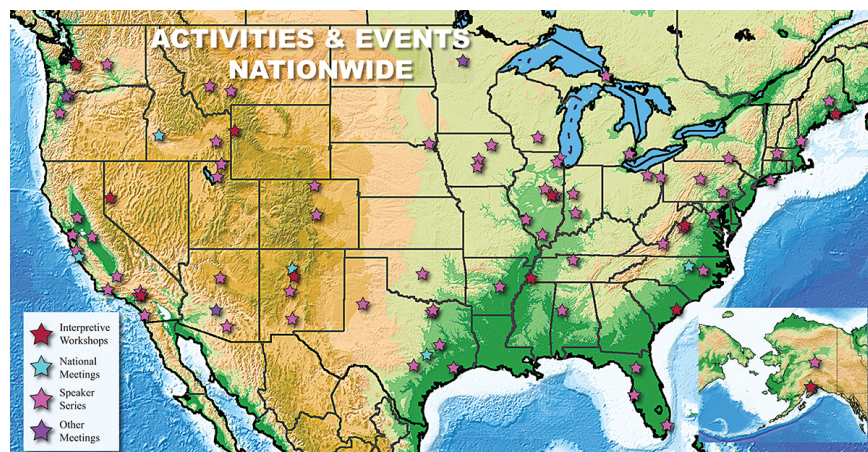
EarthScope's Contributions to the Practice of Place-Based Geoscience Education

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When we name, explore, inhabit, or in any way experience a locality, we make it a *place*. We are naturally connected to places, often forming intellectual and emotional ties (the *sense of place*) to places that are meaningful to us in some way. *Place-based education* (PBE) is characterized by situating content and practice in the landscapes and communities of specific, typically local, places and regions. It is applicable to formal classroom, lab, and field teaching as well as to free-choice teaching or interpretation as practiced in museums, parks, and in educational media. Its curriculum is organized according to the attributes of place, and sense of place is used as an authentic learning outcome and assessment measure. PBE is trans-disciplinary and fosters environmental and cultural sustainability of the places and regions taught. A place-based approach to geoscience education empowers learners to engage with readily accessible and more familiar Earth features, processes, and history; illustrates connections among geoscience and local environmental, economic, and public safety issues; and prepares students for subsequent study of the Earth system at global scale. Because places are cultural constructs as well as spatial localities, authentic PBE draws useful examples and cases from other pertinent disciplines in the natural sciences, social sciences, and humanities; all to furnish richer context for geoscientific inquiry. Research increasingly supports the use of PBE to motivate interest and foster scientific literacy in more socioculturally diverse learners (including underrepresented minority students) and the general public.

Although all regions of the United States have rich and interesting geodynamic and geomorphic histories, many also have low relief and limited outcrop that challenge place-based Earth science teaching focused on local geology. EarthScope research is now revealing unprecedented detail about transcontinental crustal and mantle structure that can help bring local geologic stories to life for teachers and students. EarthScope researchers and educators are also developing and disseminating resources and programs intended to share locally relevant geoscientific findings with educators and the public. Some illustrative examples include the Cascadia EarthScope Earthquake and Tsunami Education Program, the SPREE Project in the Midcontinent Rift, the Illinois EarthScope Program, and the Earth Science Interpretive Workshop and Native Science Educator Workshop series presented by the EarthScope National Office. Many stakeholders served by these programs (from K-12 teachers to Park Rangers) are, in turn, using EarthScope science to enhance their own place-based teaching and interpretation. As EarthScope geoscientists continue to “unlock the secrets of the North American continent and the processes that cause earthquakes and volcanoes,” they should be encouraged and empowered to disseminate their discoveries in ways that actively foster and enhance place-based geoscience education.



Education and Outreach program map courtesy of EarthScope National Office